

SN 09/298,297
Docket No. S-91,732
In Response to Office Action dated December 6, 2004

REMARKS

Applicant appreciates the courtesy shown by the Office, as shown by the Office Action mailed on December 6, 2004. In that Office Action, the Examiner rejected Claims 1-26. As such, Claims 1-26 remain in the case with none of the claims being allowed.

The December 6 Office Action has been carefully considered. After such consideration, Claims 1, 14, 20, 21, and 25 have been amended. Applicant respectfully requests reconsideration of the application in light of the accompanying amendment and remarks presented herein.

Applicant hereby acknowledges the acceptance the formal drawings by the Examiner and receipt of the IDS filed on August 30, 1999, by the Examiner.

The Examiner has objected to the specification, due to a typographical error in the Abstract. The Examiner has additionally stated that the length of the Abstract should be in a range from 50 to 150 words. Applicant submits that the typographical error has been corrected to overcome the objection, and that the Abstract has been shortened to a length of less than 150 words.

The Examiner has objected to Claims 20 and 21 due to informalities, and has required correction so that the claims correspond to Claims 14 and 19, from which the objected claims depend. Applicant submits that the respective preambles of Claims 20 and 21 have been amended accordingly to overcome the objection.

Claims 25 and 26 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner states that the term "the nonlinear optical material" lacks proper antecedent basis. Applicant submits that Claim 25 has been amended by replacing "the nonlinear optical material" with "the transparent spacer layer," thereby providing proper antecedent basis for Claims 25 and 26. By so amending Claim 25, the rejection of these claims under 35 U.S.C. 112, second paragraph, is successfully overcome.

Claims 1, 9, 14, and 24 have been rejected under 35 U.S.C. §102(b) as being anticipated by Toshiba (EP 0 482 920 A2).

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In order to anticipate under §102, a reference must teach each and every aspect of the claimed invention. Accordingly, Applicant submits that Toshiba does not teach all of the elements of the above-referenced claims, as amended.

Applicant submits that independent Claim 1 has been amended to recite a method of generating a material in which the donor layer, nonlinear optical material layer, and acceptor layer are self-assembled to form a superlattice. Similarly, independent Claim 14 has been amended to recite a method of generating a material in which the donor layer, transparent spacer layer, and acceptor layer are self-assembled to form a superlattice. In addition, Claim 1 has been amended to recite the limitation that the donor layer is deposited directly onto the substrate. Support for the amendments is found on pages 7-9 of the specification, and in Figures 1, 3, and 5.

Applicant submits that Toshiba does not teach the self-assembly of the donor, nonlinear, and acceptor layers into a superlattice. The reference is instead silent as to the formation of a superlattice from the three layers through self-assembly.

Applicant further submits that Toshiba does not teach depositing the donor layer *directly* on the substrate. Instead, the reference teaches an optical element in which the donor layer is separated from the substrate by multiple intervening layers of material. See, for example, Figures 1 and 50 of the reference.

Applicant therefore submits that, because the reference fails to teach every limitation of amended Claims 1 and 14, the rejection of these claims and the claims dependent thereon under 35 U.S.C. §102(b) as being anticipated by Toshiba is successfully overcome.

Claims 14, 15, and 24 have been rejected under 35 U.S.C. §102(b) as being anticipated by Schrepp et al. (U.S. Patent 5,294,402).

Applicant submits that Schrepp et al. does not teach all of the limitations of Claim 14, and, by reference, Claims 15 and 24. Namely, the reference does not teach the formation of the deposited donor layer, transparent spacer layer, and acceptor layer into a superlattice. Applicant submits that, because the reference does not teach all of the limitations of amended independent Claim 14, the rejection of the claim and the claims dependent thereon under 35 U.S.C. §102(b) as being anticipated by Schrepp et al. is therefore successfully overcome.

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Claims 1 and 2 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Oldenburg et al. (U.S. Patent 6,344,272) in view of Thompson (U.S. Patent 6,107,561).

Applicant submits that, in order to establish a *prima facie* case of obviousness, the combination of references cited by the Examiner must either teach or suggest all of the limitations of the claimed invention. Accordingly, Applicant submits that neither reference teaches or suggests the formation of the donor, nonlinear optical material, and acceptor layers into a superlattice; the references are silent as to the formation of such a superlattice. Applicant therefore submits that, because the combination of references neither teaches nor suggests all of the limitations of Claims 1 and 2, the rejection of the claims under 35 U.S.C. §103(a) as being unpatentable over Oldenburg et al. in view of Thompson is successfully overcome.

Claims 1-3, 5-16, and 18-26 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Toshiba in view of Thompson et al., and in further view of Roberts et al. (US H2046), Lvov et al. ("Non-linear optical effects..."), Branch et al. (U.S. Patent 5,741,442), and Yu et al. (U.S. Patent 6,441,395 B1).

Applicant submits that the combination of references cited by the Examiner neither teaches nor suggests the formation of the donor layer, the nonlinear optical material or transparent spacer layer, and the acceptor layer into a superlattice. As previously presented, neither Toshiba nor Thompson et al. teach the formation of such a superlattice. Applicant submits that Roberts et al., Lvov et al., Branch et al., and Yu et al. are also silent as to this limitation. Applicant therefore submits that, because the combination of references neither teaches nor suggests all of the limitations of amended independent Claims 1 and 14, the rejection of these claims and the claims dependent thereon under 35 U.S.C. §103(a) as being unpatentable over Toshiba in view of Thompson et al., and in further view of Roberts et al., Lvov et al., Branch et al., and Yu et al. is successfully overcome.

Claims 4 and 17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Toshiba in view of Thompson et al., and in further view of Roberts et al., Lvov et al., Branch et al., and Yu et al., and in further view of Jacobson et al. (U.S. Patent 6,445,489 B1).

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Claims 4 and 17 depend from independent Claims 1 and 14, respectively, and thus incorporate by reference all of the limitations of these base claims. As previously presented, neither Toshiba, nor Thompson et al., nor Roberts et al., nor Lvov et al., nor Branch et al., nor Yu et al. teach the formation of the donor layer, the nonlinear optical material or transparent spacer layer, and the acceptor layer into a superlattice. Applicant submits that Jacobson et al. is silent as well with respect to this limitation. Applicant therefore submits that, because the combination of references neither teaches nor suggests all of the limitations of Claims 4 and 17, the rejection of these claims under 35 U.S.C. §103(a) as being unpatentable over Toshiba in view of Thompson et al., and in further view of Roberts et al., Lvov et al., Branch et al., and Yu et al., and in further view of Jacobson et al. is successfully overcome.

In light of the amendment and remarks presented herein, Applicant submits that the case is in condition for immediate allowance and respectfully requests such action. If, however, any issues remain unresolved, the Examiner is invited to telephone the Applicant's counsel at the number provided below.

Respectfully submitted,

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